Amendment to the Claims

Please amend the claims as follows:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for the preparation of simvastatin comprising a homodiacylation process comprising:

(a) enzymatic hydrolysis of lovastatin, lovastatin acid or a salt of lovastatin acid with an esterase enzyme to form a triol acid,

wherein the esterase has a sequence having at least about 90% sequence identity to SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6;

(b) forming a diol lactone from the triol acid by lactonization;

(c) acylating ~~acylatng~~ the 4-position (4'-OH) and 8-position (8'-OH) on the lactone ring of the diol lactone by chemical acylation to form a 4,8-diacetyl lactone; and

(d) removing selectively the acyl group at the 4' position ~~postion~~ by enzymatic hydrolysis, thereby making simvastatin.

Claims 2 to 17 (canceled)

Claim 18 (currently amended): A method for preparing 4-acetyl lactone comprising enzymatic hydrolysis of lovastatin with an esterase enzyme to make a triol acid or a salt of a triol acid, followed by lactonization of the triol acid to make a diol lactone, followed by regioselective enzymatic acylation of the diol lactone on the 4-position (4'-OH) of the lactone ring to make 4-acetyl lactone,

wherein the esterase has a sequence having at least about 90% sequence identity to SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6.

Claim 19 (currently amended): A method for preparing 4-acetyl-simvastatin comprising enzymatic hydrolysis of lovastatin with an esterase enzyme to make a triol acid or a salt of a triol acid, followed by lactonization of the triol acid to make a diol lactone, followed by regioselective

enzymatic acylation of the diol lactone on the 4-position (4'-OH) of the lactone ring to make 4-acetyl lactone, followed by regioselective enzymatic acylation of the 4-acetyl lactone on the 8-position (8'-OH) of the lactone to make 4-acetyl-simvastatin,

wherein the esterase has a sequence having at least about 90% sequence identity to SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6.

Claim 20 (currently amended): A method for the preparation of a triol acid or a salt of a triol acid from lovastatin with an esterase enzyme comprising:

(a) providing a lovastatin, lovastatin or a salt of lovastatin, and an esterase enzyme; and

(b) contacting the lovastatin, lovastatin or a salt of lovastatin with the esterase under conditions wherein the esterase catalyzes the hydrolysis of the lovastatin to a triol acid or a salt of a triol acid,

wherein the esterase has a sequence having at least about 90% sequence identity to SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6.

Claims 21 to 36 (canceled)

Claim 37 (currently amended): A kit comprising (a) reagents and at least one esterase ~~hydrolase~~ enzyme for practicing the methods of Claim 1, wherein the esterase has a sequence having at least about 90% sequence identity to SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6; and (b) instructions for practicing the methods of Claim 1 ~~the kit of (a), wherein the at least one hydrolase enzyme has a sequence having at least about 50%, 51%, 52%, 53%, 54%, 55%, 56%, 57%, 58%, 59%, 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%, 74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 85%, 85%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or more, or complete (100%) sequence identity to SEQ ID NO:4, or enzymatically active fragments there~~.

Claims 38 to 40 (canceled)

Claim 41 (previously presented): The method of claim 1, wherein at least one step is performed in a separate reaction vessel.

Claim 42 (previously presented): The method of claim 41, wherein at least two steps are performed in separate reaction vessels.

Claim 43 (previously presented): The method of claim 1, wherein at least one step is performed with a cell extract, or at least one step is performed in a whole cell.

Claim 44 (previously presented): The method of claim 1, further comprising crystallization of the simvastatin.

Claim 45 (previously presented): The method of claim 44, further comprising re-crystallization of the simvastatin.

Claim 46 (previously presented): The method of claim 1, further comprising re-lactonization to provide simvastatin with a desired purity.

Claim 47 (currently amended): The method of claim 1, wherein at least one hydrolysis reaction is carried out by an esterase ~~a hydrolase~~:

(a) encoded by a nucleic acid having at least ~~55%, 56%, 57%, 58%, 59%, 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%, 74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 85%, 85%, 87%, 88%, 89%,~~ **90%**~~, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or more, or complete (100%)~~ sequence identity to SEQ ID NO:1, or enzymatically active fragments thereof;

(b) encoded by a nucleic acid having at least ~~53%, 54%, 55%, 56%, 57%, 58%, 59%, 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%, 74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 85%, 85%, 87%, 88%, 89%,~~ **90%**~~, 91%, 92%, 93%, 94%, 95%,~~

~~96%, 97%, 98%, 99%, or more, or complete (100%)~~ sequence identity to SEQ ID NO:3, or enzymatically active fragments thereof; or

(c) encoded by a nucleic acid having at least ~~56%, 57%, 58%, 59%, 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%, 74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 85%, 85%, 87%, 88%, 89%,~~ **90%**~~, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or more, or complete (100%)~~ sequence identity to SEQ ID NO:5, or enzymatically active fragments thereof.

Claim 48 (currently amended): The method of claim 1, wherein at least one hydrolysis reaction is carried out by an esterase ~~a hydrolase~~ having a sequence at least about ~~50%, 51%, 52%, 53%, 54%, 55%, 56%, 57%, 58%, 59%, 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%, 74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 85%, 85%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%,~~ **95%**~~, 96%, 97%, 98%, 99%, or more, or complete (100%)~~ sequence identity to SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6, or enzymatically active fragments thereof.

Claim 49 (previously presented): The method of claim 1, wherein the method further comprises enzymatic hydrolysis of lovastatin to make a triol acid or a salt of a triol acid.

Claim 50 (previously presented): The method of claim 49, wherein the method further comprises lactonization of the triol acid and enzymatic acylation of the 4-postion (4'-OH) of the lactone ring to make a 4-acyl lactone.

Claim 51 (previously presented): The method of claim 50, wherein the method further comprises enzymatic acylation of the 4-acyl lactone to make a 4-acetyl-simvastatin.

Claim 52 (previously presented): The method of claim 51, wherein the method further comprises regioselective enzymatic hydrolysis of the 4-acetyl-simvastatin to make simvastatin.

Claim 53 (currently amended): The method of claim 20, wherein the esterase has a sequence at least about ~~50%, 51%, 52%, 53%, 54%, 55%, 56%, 57%, 58%, 59%, 60%, 61%, 62%, 63%, 64%, 65%, 66%, 67%, 68%, 69%, 70%, 71%, 72%, 73%, 74%, 75%, 76%, 77%, 78%, 79%, 80%, 81%, 82%, 83%, 85%, 85%, 87%, 88%, 89%, 90%, 91%, 92%, 93%, 94%,~~ **95%**, ~~96%, 97%, 98%, 99%, or more, or complete (100%)~~ sequence identity to SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6.

Claim 54 (new): The method of claim 1, wherein enzymatic hydrolysis reaction is carried out by an esterase having a sequence as set forth in SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6.

Claim 55 (new): The method of claim 18, wherein enzymatic hydrolysis reaction is carried out by an esterase having a sequence as set forth in SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6.

Claim 56 (new): The method of claim 19, wherein enzymatic hydrolysis reaction is carried out by an esterase having a sequence as set forth in SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6.

Claim 57 (new): The method of claim 20, wherein enzymatic hydrolysis reaction is carried out by an esterase having a sequence as set forth in SEQ ID NO:2, SEQ ID NO:4 or SEQ ID NO:6.